Space Weather Forecast

Issued on Wednesday, 12 June 2024 at 00:23 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of isolated Moderate flares (R1-R2 radio blackouts) and minor solar radiation (S1) initially, this risk declining into the period.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity is Low with only Common class activity over the last 24hrs. There are currently eight sunspot regions on the visible disc. There are currently seven sunspot regions on the visible disc, with six numbered and a small as yet unnumbered region developing in the southeast. AR3709 in the southeast is now the largest region. It consists of a larger leader spot surrounded by some smaller trailing spots, although recent growth has stalled. The remaining regions are mostly simple and stable with a couple of previous spots fading from view.

No Earth-directed CMEs have been observed in the past 24 hours.

Solar Wind / Geomagnetic Activity: Solar winds generally declined from a peak around 550 km/s early in the period towards current speeds of around 350 km/s. The IMF (Interplanetary Magnetic Field), Bt, was initially moderate but steadily fell back to weak levels. The north-south component, Bz, was also initially moderate, but has also dropped back to weak levels, with only brief negative intervals. Geomagnetic activity was initially Unsettled to Active (Kp3-4) due to CME influence but declined to become Quiet (Kp1-2).

Energetic Particles / Solar Radiation: Solar radiation levels remained below the S1/Minor radiation storm level.

Four-Day Space Weather Forecast Summary

Solar Activity: There is a chance of Moderate flares, with just a slight chance of isolated Strong flares initially, these most probably from the large region recently rotated around the southwest limb in the near term. The flare risk reduces into the period pending further developments.

Solar Wind / Geomagnetic Activity: Solar wind speeds are now at background levels as recent CME influence continues to wane and are currently expected to remain so through much of the period.

Overall, geomagnetic activity is likely to be mostly Quiet, with a chance of Unsettled to Active intervals into day 3 and day 4 (14-15 Jun) due to any weak faster wind influence.

Energetic Particles / Solar Radiation: Solar radiation is now below S1/Minor radiation storm levels after the recent enhancement. A chance of further S1 enhancement is maintained for day 1 (12 Jun), before the risk eases into the period.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	25	20	20
Very Active	R3 to R5 X	No	10	5	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	30	5	5	5
Very Active	≥ S3 *	No	5	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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